

Obstacle Race



Introduction

The Obstacle Race is an exciting robotics challenge designed to encourage innovation, teamwork, and problem-solving among school students.

Participants will design and build a robot capable of navigating a challenging track filled with obstacles. Robots may be either wired or wireless, giving teams the freedom to choose their preferred control method.

The competition is conducted in multiple stages, with the difficulty of obstacles increasing after each stage, ensuring a progressively challenging experience. The layout and nature of obstacles will be revealed just before each round to test creativity, adaptability, and quick decision-making.

Structure of the Game / Match Format

1. Competition Format

- The obstacle race is conducted in a head-to-head format, where two teams compete against each other at a time.
- The event follows a knockout system — the winner of each race advances to the next round, while the losing team is eliminated from the competition.
- The process continues through multiple rounds (Preliminary → Quarterfinals → Semifinals → Final) until the final winner is declared.

2. Progressive Difficulty

- After each round, the number and complexity of obstacles will be increased for the next stage.
- Teams will be informed of the obstacle layout only at the time of play to maintain fairness

3. Time Limit

- Each team has a maximum of 10 minutes to complete the race.
- If both teams fail to complete the race within the allotted time, both are eliminated.

4. Track Completion Criteria

- The robot must cross the finish line with its entire body to be considered a valid completion.

- Any robot that skips an obstacle or leaves the track may face penalty time or disqualification.

5. Tie-Breaker

- If both teams finish at exactly the same time, the match will be replayed on a freshly set track.

Eligibility & Team Formation

1. Eligibility Criteria

- Participation is open to **students from Class 5 to Class 10** only.
- Students must be currently enrolled in a recognized school.
- A valid **school ID card** or letter from the school must be presented at registration.

2. Team Size

- Each team must consist of 1 to 3 members.
- One member will act as the robot operator during the race, while the others assist in preparation.

3. Robot Ownership

- Each team is allowed to bring only one robot to compete throughout the event.
- The robot must be designed and built by the students themselves.
- Commercially bought, rented robots are strictly prohibited.

4. Control Type

- Teams may use either wired or wireless control systems.
- Robots must be designed such that the chosen control method does not interfere with other teams.

5. Registration

- Teams must register before the event deadline and provide all necessary details about their robot.
- No change of team members will be allowed after registration is closed.

6. Team Responsibility

- Teams are responsible for carrying their robot, controllers, spare parts, and repair tools.
- Teams must ensure their robot passes the **technical inspection** before the race begins.

Robot Specifications

1. Dimensions & Weight

- Maximum robot size: 30 cm × 30 cm × 30 cm (L × W × H).
- Maximum permissible weight: 5 kg, including batteries, controller, and all mounted components.

2. Control System

- Robots may use wired or wireless controls.
- Wireless robots must use secure and interference-free communication methods (e.g., RF modules, Bluetooth).
- Wired robots must have sufficiently long wires to complete the race without tangling.

3. Power Source

- Only DC battery-powered robots are allowed, with a maximum voltage of 24V.
- Direct AC mains connection is strictly prohibited for safety reasons.

4. Motors & Components

- Teams may use DC motors, geared motors, and standard wheels/tracks.
- All components must be properly mounted and free of loose connections.

5. Safety Requirements

- Robots must not have sharp edges, exposed wires, or emit smoke/fire during operation.
- Robots that are unsafe or likely to damage the track/other robots will be disqualified until fixed.

6. Technical Inspection

- All robots must pass a pre-race inspection to verify compliance with size, weight, and safety rules.
- Teams must make necessary modifications if their robot fails inspection before being allowed to race.

Track Specifications

1. Track Layout

- The race track area will measure approximately **15 ft × 20 ft** (or as specified by organizers).
- Track Width 60 cm approx. (may change)



- Both robots will compete simultaneously on the same track.
- The track will include multiple obstacles such as:
 - Hill climb
 - Speed breakers
 - Marbles
 - See Saw
 - Sand pit
 - Bridge climb
 - Rotating obstacle

2. Obstacle Arrangement

- The number and type of obstacles will increase progressively after each round to make the race more challenging.
- The exact obstacle arrangement for each round will be revealed only at the time of the match.
- The final round will have the most challenging layout.

3. Checkpoints

- The track will have multiple checkpoints marked along the course.
- If a robot malfunctions, stops working, or goes off-track, it will be placed back at the last cleared checkpoint.
- Restarting from a checkpoint will consume valuable time, so teams should design for reliability.

4. Track Markings

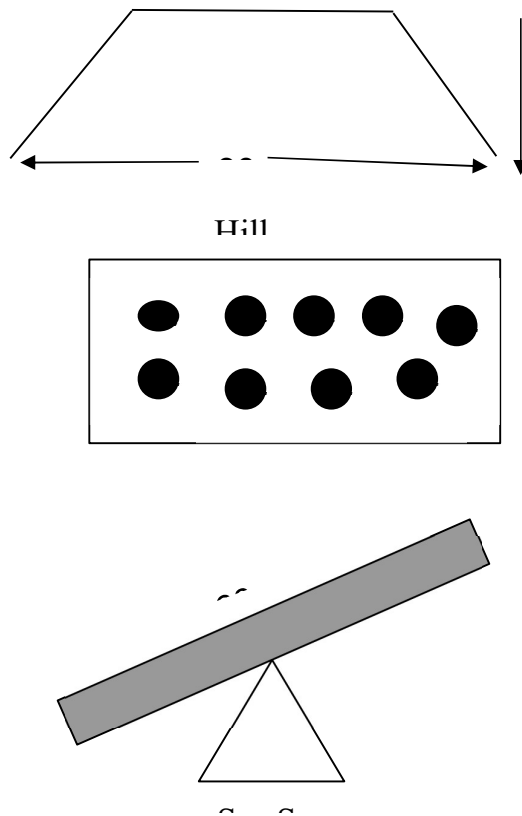
- Start and finish lines will be clearly marked.

- Any robot that skips an obstacle or checkpoint may face penalty time or disqualification.

5. Surface & Material

- The track will have a flat, non-slippery surface to allow smooth movement of robots.
- Obstacles will be built using safe and durable materials such as wood, PVC, or plastic.

6. Obstacle Layout:



- The above given are some obstacles for reference and there will be many more at the time of game.

Note: The **track length and layout** may vary based on the organizer's decision and may be modified for different rounds to ensure fairness and progressive difficulty.

General Rules

1. Robot Ownership & Build

- Robots must be built entirely by the registered student team.

- Commercially bought or pre-assembled robots are strictly prohibited.

2. Operation & Control

- Only one team member may operate the robot during the race.
- Teams must ensure their control system (wired/wireless) does not interfere with other robots.

3. Fair Play & Conduct

- Teams must not intentionally block, collide with, or damage the opponent's robot.
- Any attempt to tamper with the track or gain unfair advantage will lead to disqualification.

4. Checkpoints & Restarts

- If a robot stops working, it may be placed back at the last cleared checkpoint by the team or a referee.
- Time will continue running during restarts, so quick recovery is critical.
- Teams are not allowed to skip checkpoints; doing so will result in a penalty or disqualification.

5. Repairs

- Teams may repair their robot between rounds, but not during an ongoing race.
- If a robot is unable to restart within a reasonable time (as decided by judges), it will be considered disqualified.

6. Timing & Completion

- The maximum time limit for each round is 10 minutes.
- If neither team completes the track within the time limit, both are eliminated.
- The winner is the team whose robot crosses the finish line first with its entire body.

7. Judges Authority

- Judges may pause, restart, or cancel a race in case of technical issues or safety concerns.
- Judges' decisions regarding timing, penalties, and disqualifications are **final and binding**.

8. Team Responsibility

- Teams must carry all necessary tools, spare parts, and batteries.

- Teams must report on time when their turn is announced. Late reporting may lead to disqualification.

Judging & Scoring Criteria

1. Primary Judging Parameter – Completion Time

- The main scoring parameter is the time taken by the robot to complete the entire track.
- The team with the fastest completion time wins the round and advances to the next stage.

2. Checkpoints

- Reaching each checkpoint ensures progress is recorded.
- If a robot restarts from a checkpoint, the overall timer continues to run — no time reset is given.

3. Penalties

- Obstacle Skipping: If a robot skips an obstacle, It should restart from the last cleared checkpoint. Repeated skipping may result in disqualification.
- Lane Violation: If a robot goes out of track or crosses boundaries, a time penalty may be imposed or restart may be required from the last checkpoint.
- Unfair Play: Intentionally damaging the track or opponent's robot leads to immediate disqualification.

4. Tie-Breaker

- If both robots finish within the same time (difference less than 1 second), the round will be replayed on the same track.

5. Disqualification Conditions

- Robot not meeting specifications (size, weight, power source).
- Use of unsafe or non-permitted components.

Logistics & Facilities

1. Power Supply

- Standard electrical power points will be available at the venue for charging batteries.
- Participants must bring their own extension cords, adapters, and spare batteries if required.

2. Competition Arena

- The official game track (Obstacle Race) will be available only during the competition rounds.
- Participants are not allowed to enter or tamper with the track before or after their scheduled round.

3. Emergency Support

- Basic first aid facilities will be available at the venue.
- A fire extinguisher will be kept on standby as a precautionary measure.

4. Team Assistance

- Only registered participants are allowed inside the competition area.
- Teachers, parents, and mentors may support participants outside the arena but are not allowed to interfere during matches.

Disclaimer

The organizing committee reserves the right to modify, add, or remove rules and regulations of the competition if deemed necessary. Any such changes will be communicated to participants before the commencement of the event. Participants are expected to stay updated through the official announcements made by the coordinators.



Event Logistics

- **Venue:** Cambridge International School, Akurdi, PCMC, Pune.
Google maps location: <https://share.google/9rHx8Pm8lYo0yYLow>
- **Date:** Sunday, 16th November 2025
- **Registration Fee:** ₹1500 per team & ₹1000 for Individual participation
- **Last Date to Register:** 10th Nov, 2025
- **Contact:** 9730480960, Motionrobotics@gmail.com ,
- **Website:** www.motionrobotics.in

